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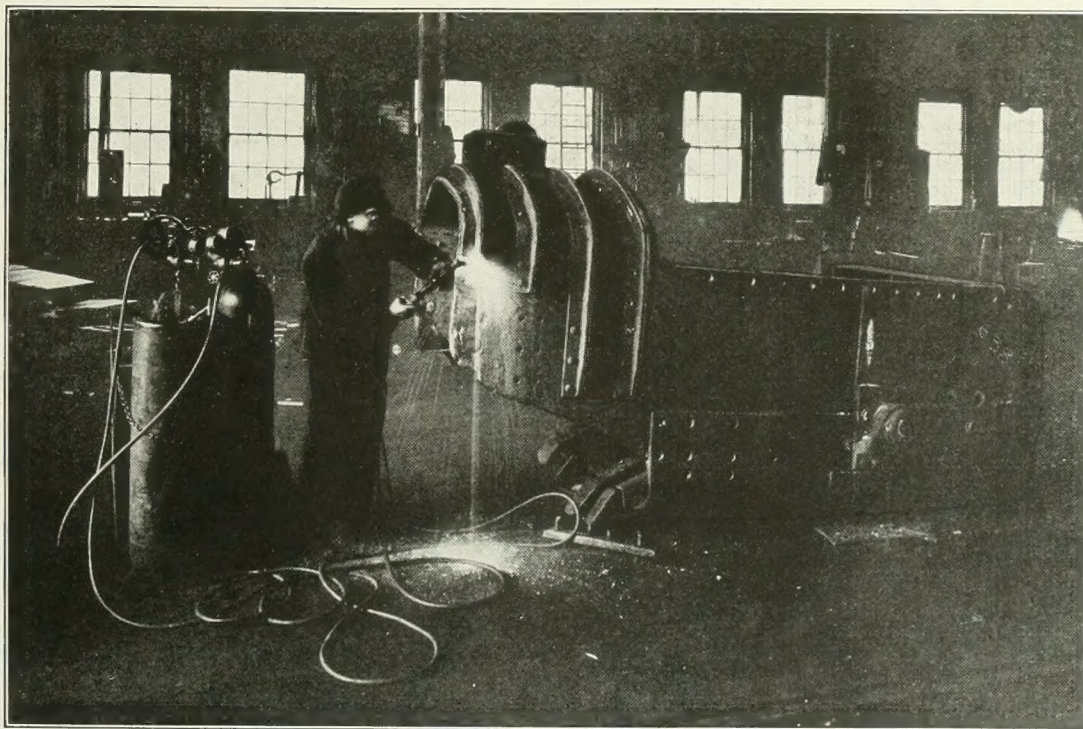
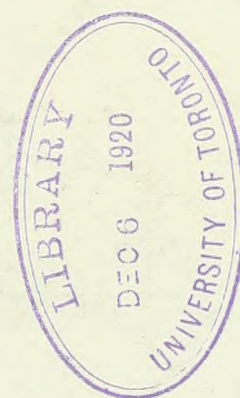
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THE MIAMI CONSERVANCY BULLETIN

December 1918



CUTTING OFF A RIVET HEAD WITH AN OXY-ACETYLENE APPARATUS.

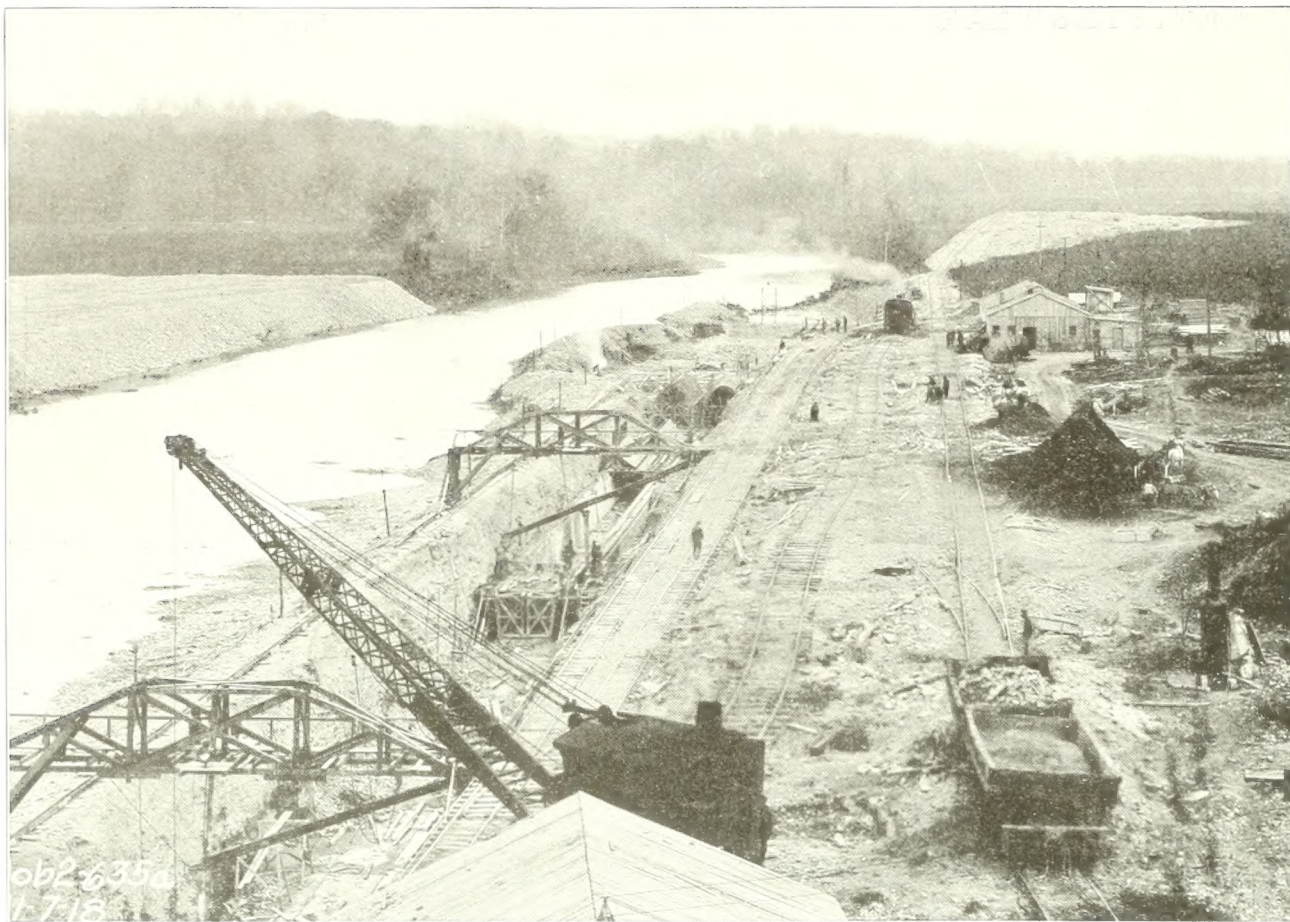


FIG. 62.—VIEW FROM TOP OF GRAVEL WASHING PLANT, ENGLEWOOD.

The view is down stream. The excavation for the outlet conduit is seen between the river and the railway track. All of this excavation here shown is now floored with concrete. The forms for the side walls appear in the foreground of the picture and the completed walls will be noted just beyond. Still further down, the forms for the arched tops of the conduits appear, the conduits being double. What look like bridges across the excavation are two timber trusses for supporting the concrete chutes, which differ only in detail from those described in Figure 68. The concrete is carried in cars along the top of the bank and discharged directly into the chutes. This arrangement has advantages here over the use of concreting towers and chutes.

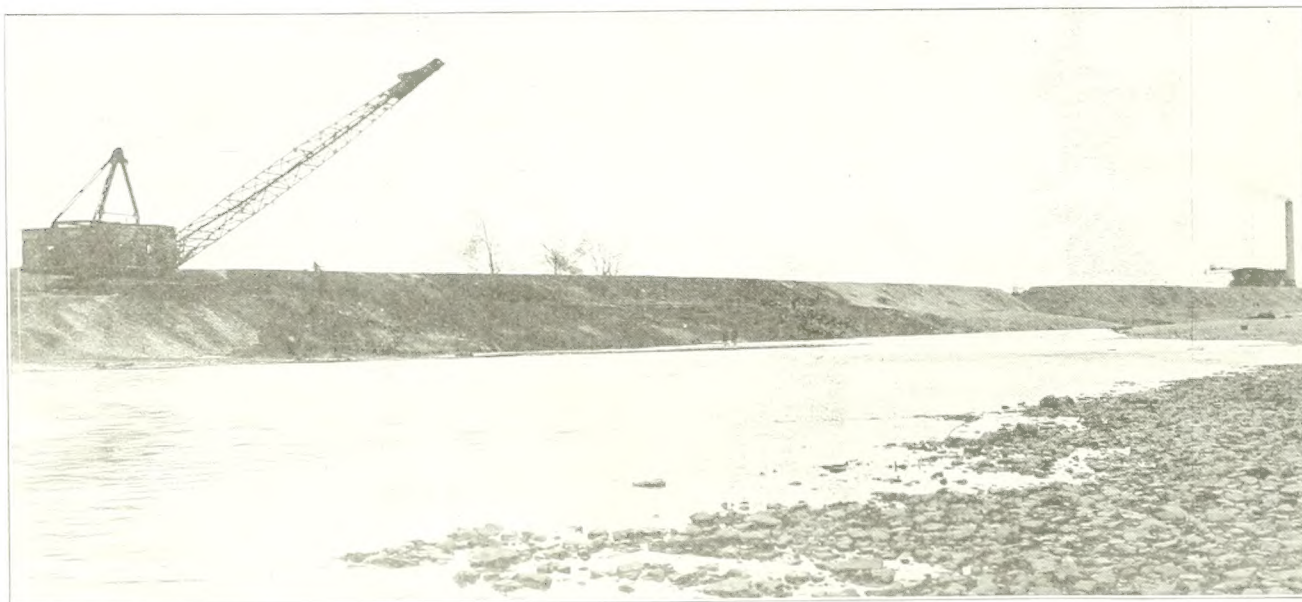


FIG. 63.—THE NEW MIAMI RIVER LEVEE AT HAMILTON

The levee is being built of materials taken from the river by the Class 24 Bucyrus dragline seen at the left. The top of the old river bank, on which the new material has been piled, can be clearly distinguished. The river is running in its lowered channel, about 6 ft. below its former level. It is planned later to build a highway on the top of the levee.

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THE MIAMI CONSERVANCY BULLETIN

PUBLISHED BY THE MIAMI CONSERVANCY DISTRICT

DAYTON, OHIO

Volume 1

December 1918

Number 5

The Effect of the Armistice

The signing of the Armistice, marking as it does the practical end of the war, has already had its effect on the District in reducing some of the difficulties in the way of carrying on the work. With the removal of priorities, materials and equipment are easier to obtain. The load of the government on the railways being lightened, shipments can be more prompt. The same causes will of course later lead to lower prices.

More than in either of these directions the improvement appears in the easing up of the labor

situation. This has been perhaps specially noticeable in an industrial region like southwestern Ohio where many war materials have been manufactured. Many men, released from such work for other industries have already become available. With the competition for jobs thus reintroduced, the efficiency of labor is being increased; less efficient men, it is possible now to replace with others. The work of the District, which has moved steadily forward in spite of all these difficulties, can be confidently expected to reap the benefits of the better times ahead.

Paying for Liberty Loan Bonds

A word of praise is not amiss here for the manner in which those who subscribed for Liberty Loan bonds during the recent campaign, are completing their payments. Many who paid down the usual 10 per cent at the start have since paid up in full, and are now in possession of their bonds, although according to the government schedule, the last installment need not be paid until January 30 next. Their wisdom in paying up promptly is obvious, as the interest on deferred payments, while not a big item, is worth saving. The next installment is due

in the United States Treasury December 19. It should therefore reach the banks not much later than December 16. Those who complete their payments between now and December 19 will have to pay 26 cents interest in case of a \$50 bond, and 52 cents in case of a \$100 bond. After that date the interest will be more. Some Dayton banks are now able to deliver bonds immediately upon completion of payments. Others can do so only at intervals. It is this latter fact which explains why some of us have had to wait for bonds even after paying for them in full.

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Subscription to the Bulletin is 75 cents per year. At news stands 10 cents per copy. Business letters should be sent to L. F. Wilcock, Assistant Engineer, Miami Conservancy District, Dayton, Ohio. Matter for publication should be sent to G. L. Teeple, Miami Conservancy District, Dayton, Ohio.

The Conservancy Shop

Why It Was Considered Advisable to Have the Work Done by the District's Own Men.

A number of reasons determined the authorities of the District to have a shop manned and managed by the District's own men. On any job of construction, there is always much work in repair and rebuilding of machinery. This work might be done by outsiders, but not so well. Dayton shops were swamped with government work, and such private work as the government permitted. To get a repair job rushed, as it ought to be rushed, would be difficult, at times impossible. A Conservancy shop could throw its whole force, if necessary, into the emergency. Many types of machines to be used on the Conservancy work, such as steam shovels, draglines, rock drills, etc., were such as an ordinary shop would not be accustomed to handle. Again, during

when the entire work was completed. With a shop of its own, the District could set these same men at work putting the entire equipment in first-class shape, so that it would fetch the highest possible price in the market. Such a procedure would pay for its cost many times over. All these considerations pointed to a Conservancy shop.

The property on Kiser Street at the head of Protzman Avenue, formerly occupied by the Dayton Rubber Manufacturing Co., was leased in the spring of the present season, and machinery gathered together to equip it. The property includes a large brick shop building, 75 by 200 feet in dimensions, with attached foundry. This is used as the machine and blacksmith shop and garage. There is also a

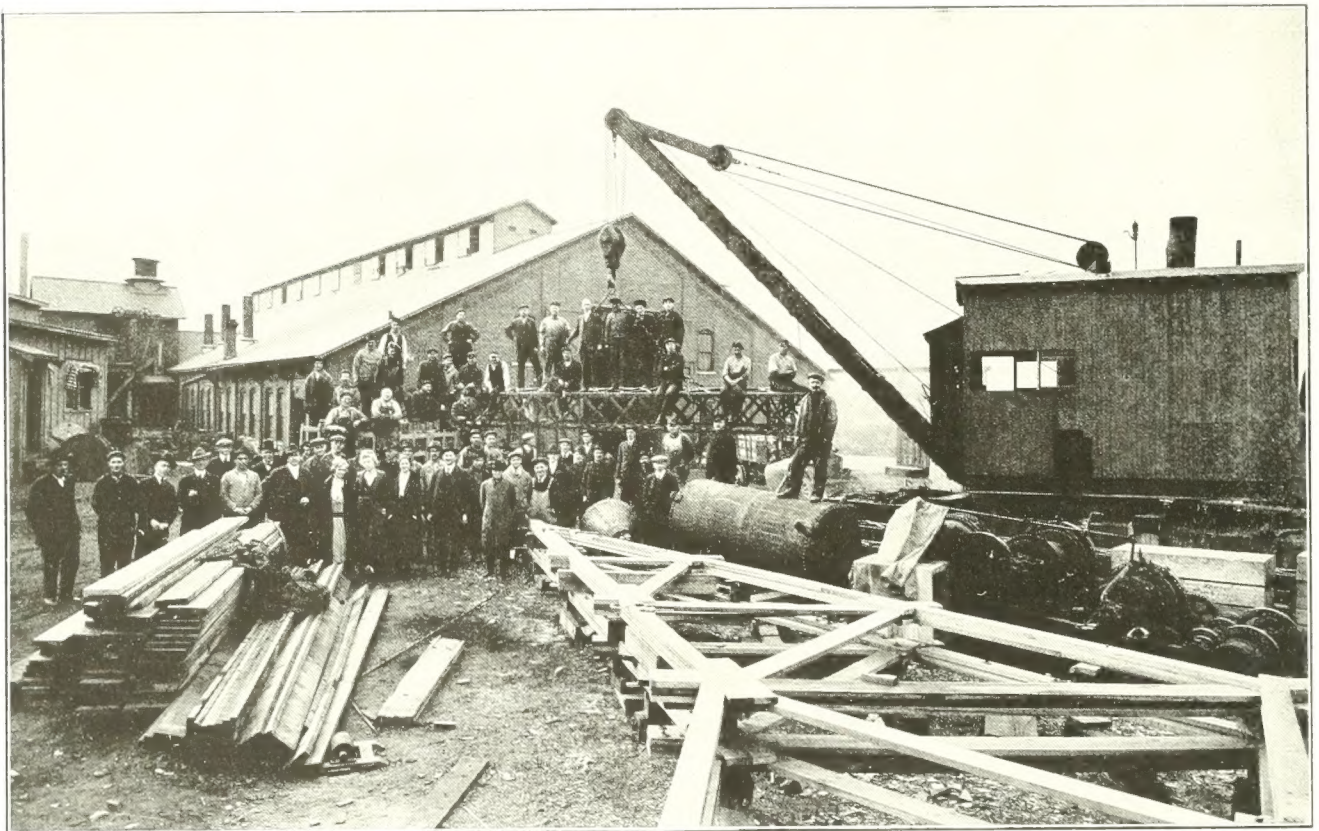


FIG. 64—EXTERIOR OF CONSERVANCY SHOP.

The view is taken from the shop yard. A concreting truss for the Germantown dam appears in the immediate foreground. The 15-ton locomotive crane at the right acts as switch engine, derrick, and coal unloader. The shop is 75 by 200 ft. in size. The warehouse office appears on the extreme left.

the winter, for several seasons, little work on the dams could be done. The dragline, dinkey and steam shovel runners, and other similarly skilled men would be idle. They might seek work elsewhere, and their places would be difficult to properly fill. If the Conservancy had a shop of its own, these men could be used through the winter in helping to make extra repair parts, against future breakage, and in putting the whole construction equipment into first-class shape for the coming season's run. Finally, there was the important question of salvage

long frame building, which is utilized as a warehouse. Both the buildings are connected by spur tracks with the Baltimore & Ohio railway leading north out of Dayton. The property has thus become the headquarters of the entire machinery, equipment, automobile, truck, and supply departments of the District. Wood work alone is not provided for. This class of work is being handled by a local firm.

The equipment includes considerable special machinery. A $9\frac{1}{2}$ "x12" Worthington air compressor runs a Green pneumatic riveter, air drills, the tire

tank in the garage and an 800-pound pneumatic hammer in the blacksmith shop. The lathes include two Le Blonde machines, 18"x10', and for the heavy work, an American lathe, 42"x16'. For flat work, there is a shaper and a 72"x30" Hughes & Phillips planer. A power punch and shears handles heavy cutting in the blacksmith shop. An oxy-acetylene welding and cutting outfit is of great service in quick repair of heavy pieces, like dragline buckets, etc. A special 15-ton locomotive crane does all-round service, acting as a switch engine about the yard, as a clamshell coal unloader, and derrick for loading and unloading heavy equipment to and from trucks and cars. A spur from the service track runs into the shop building, enabling dinkies or dump cars to be run on their own wheels directly to and from the point of repair.

The work includes not only repairs and re-building, but also the building of machinery and equipment which is new.

having in its Master Mechanic, William McIntosh, a man big enough to fill it. His work in relation to the machinery of the District is, as has been well said, much like that of a physician and surgeon among human kind. He is liable to be called in any of a dozen directions at almost any time, and when he arrives he must be ready to act at once. A passenger in the Master Mechanic's car, hitting the high spots of a country road at 45 to 50 miles an hour, on the way to the "bedside" of a disabled machine, gets a vivid impression of his host's energetic interest in these emergency cases. (The writer can testify, as he has himself hit the roof of the said car). An additional advantage is that Mr. McIntosh has worked for years with C. H. Locher, the Construction Manager, so that the two are able to give the District the benefit of team work developed over a long period of time.

As an instance of emergency work, the erection of the big Class 24 dragline at Hamilton, newly ship-

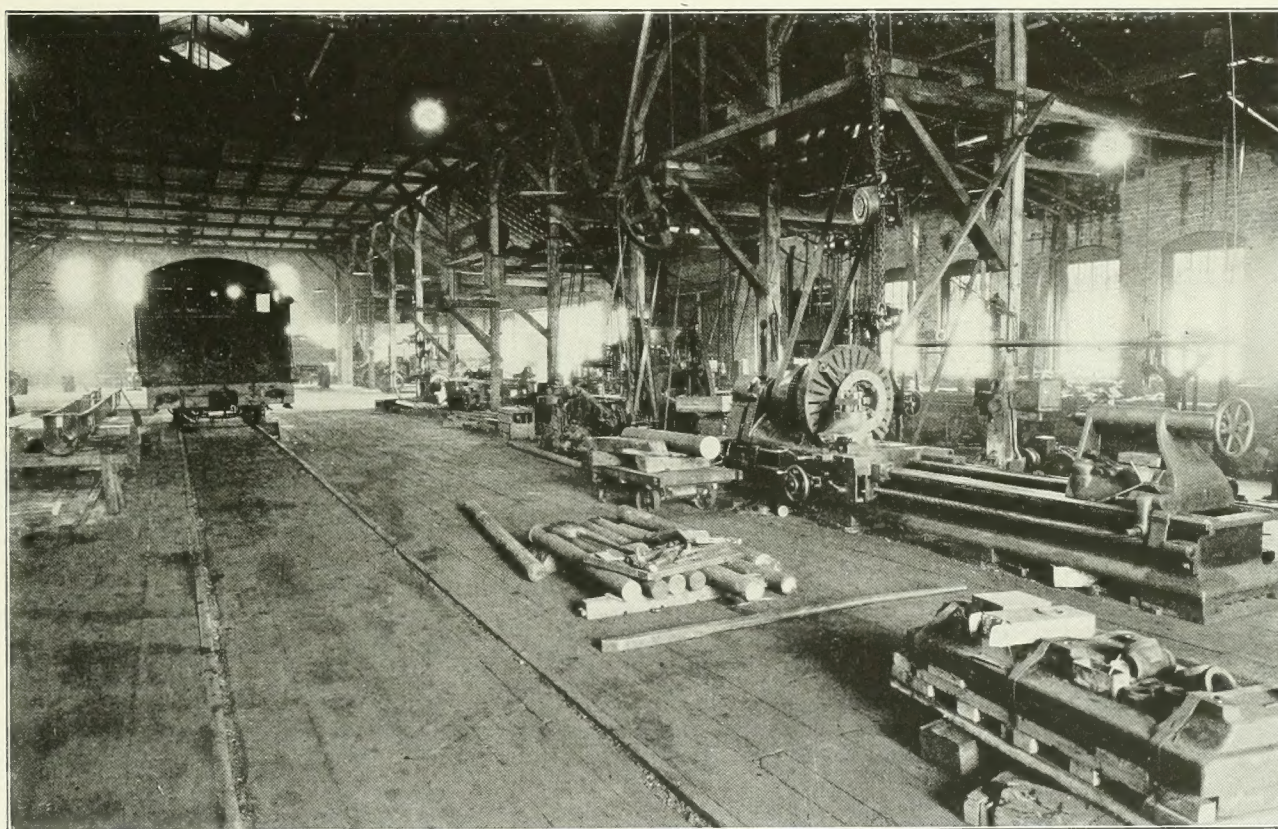


FIG. 65—INTERIOR OF CONSERVANCY SHOP.

The heavy lathe in the foreground is for use on dragline axles and similar heavy pieces, some of which appear in the foreground. The standard gauge locomotive at the left is about to be overhauled for use at one of the dams.

The repair work is perhaps as important as any of the three. The breakdown of a powerful steam shovel or dragline may seriously delay not only its own work, but important work dependent upon it. There are 18 steam shovels and draglines at work in the District, besides pumps, dinkies, dump cars, steam rollers, air compressors, derricks, concrete mixers, locomotive cranes, etc., totaling several hundred machines. There are 121 dinky locomotives and dump cars alone. To handle the repairs on all this machinery, under heavy service as much of it is, is a man's size job, and the District is fortunate in

ped to the District "knock-down" from a Mississippi swamp, with its erecting gang of some 18 men, came to a standstill last summer due to misfit, by error or accident, of the heavy angle plates at the top of the "A" frame. The local foreman, competent, but unaccustomed to heavy dragline work, found himself absolutely "up against it" and sent in an S. O. S. to headquarters for help. The Master Mechanic made the distance to Hamilton, some 40 miles, in an hour and fifteen minutes. Two hours later the misfit plates had been rebent and connected up and the work of erection was in smooth swing again.

An important feature has been the re-building of machinery to modified and improved designs. It was not always possible, in the rush of war work, to secure equipment entirely adapted to Conservancy needs. Also, experience with machinery always suggests ways of improvement. An instance covering both cases is that of the gravel washing plants. These were modified in several important particulars. Changes in the relative positions of the bins, special measuring boxes for the coarse and fine aggregates, and additional contrivances to get rid of water coming through the sand separator, were all found necessary; and the improvement is still proceeding. Another interesting instance is the modification of the big dragline, now at work in the Miami at Dayton, to adapt it to its work when mounted upon a scow. It must load into scows moored close beside it. An ordinary dragline loads its bucket by pulling the bucket toward the machine and unloads by hoisting it to the end of the boom, swinging it and dumping. To load the gravel

scows, this will need to be changed so that the bucket will be loaded while being pulled away from the machine, and dumped after being drawn in close to the dragline platform. The necessary modifications in the design are now being worked out and the work will be done in the Conservancy shop. There is also considerable work that is entirely new, like the construction of the traveling trusses, which carry the concrete chutes for the outlet conduits at Germantown and Englewood. A list of such new features would include the stern wheel steamboat which will haul the gravel scows up and down the Miami River, together with the scows themselves. The design of all these new and modified features is in charge of A. S. Robinson, the District's Mechanical Engineer. Like Mr. McIntosh, he has been associated with Mr. Locher during many years on construction jobs like that the District, and furnishes the third element, no less essential though less in evidence, in the shop team-work which is producing the results.

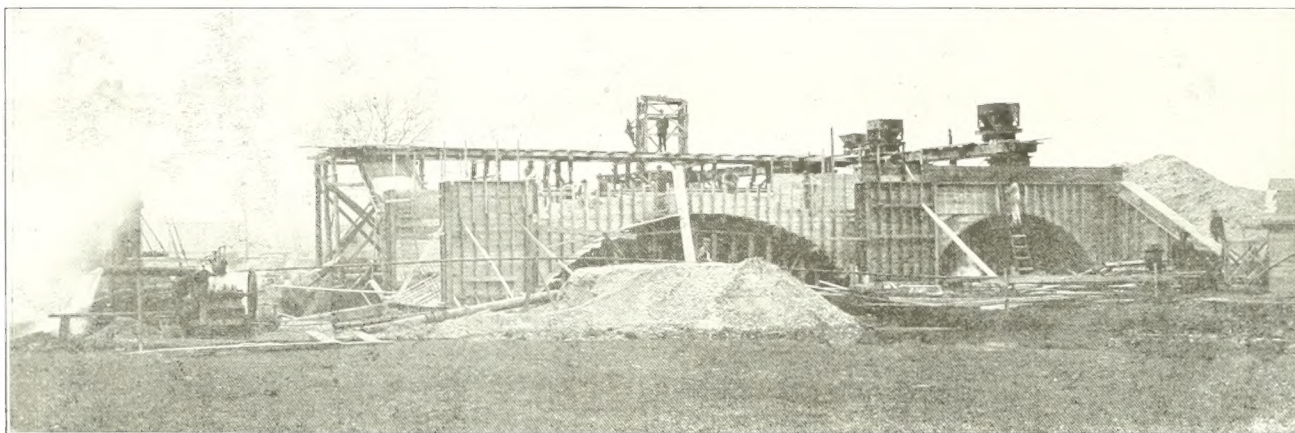


FIG. 66—CONCRETE FORMS FOR BIG FOUR BRIDGE AT MUD RUN.

This shows the forms for two of the arches ready for the concrete. It will be a three-arch bridge, with a 40 ft. center span and 25 ft. end spans. The nearer arch is the center span. The forms for the third arch have not yet been erected. A similar bridge will carry the Erie Railway just beyond this, the two single tracks being 60 ft. apart.

New Technical Report Off the Press

The fourth volume of the Technical Report series, entitled "Calculation of Flow in Open Channels," is off the press. It was written by Ivan E. Houk, hydrographer and flood forecaster for the District, and is devoted primarily to a description of the methods used by the Morgan Engineering Co. in determining the maximum flow of the Miami River and its tributaries during the flood of March, 1913, from data taken several months afterwards. One chapter deals with the calculation of that flood flow where it passed through contractions in the channel, as for instance at bridge piers. This method is accurate and was utilized extensively. The narrow river section near Taylorsville, formed by the masonry abutments of the old State canal aqueduct, between which the entire flood flow passed, is cited as a typical example.

A large section of the volume is devoted to a discussion and comparison of different formulas, many of them of foreign origin, used in the computation of river flow.

The volume as a whole is the most complete treatise presenting the present state of knowledge relative to the calculation of flow of water in open channels that has yet appeared, collecting and comparing as it does data obtained through observation and experiment by widely scattered authorities both in the United States and in Europe during a long period of time. In this respect the volume fills an urgent want.

The book contains 283 pages, 79 illustrations and 48 tables. It may be obtained upon application to the Office Engineer at the headquarters office, Dayton. The price is 75 cents.

G. H. Matthes.

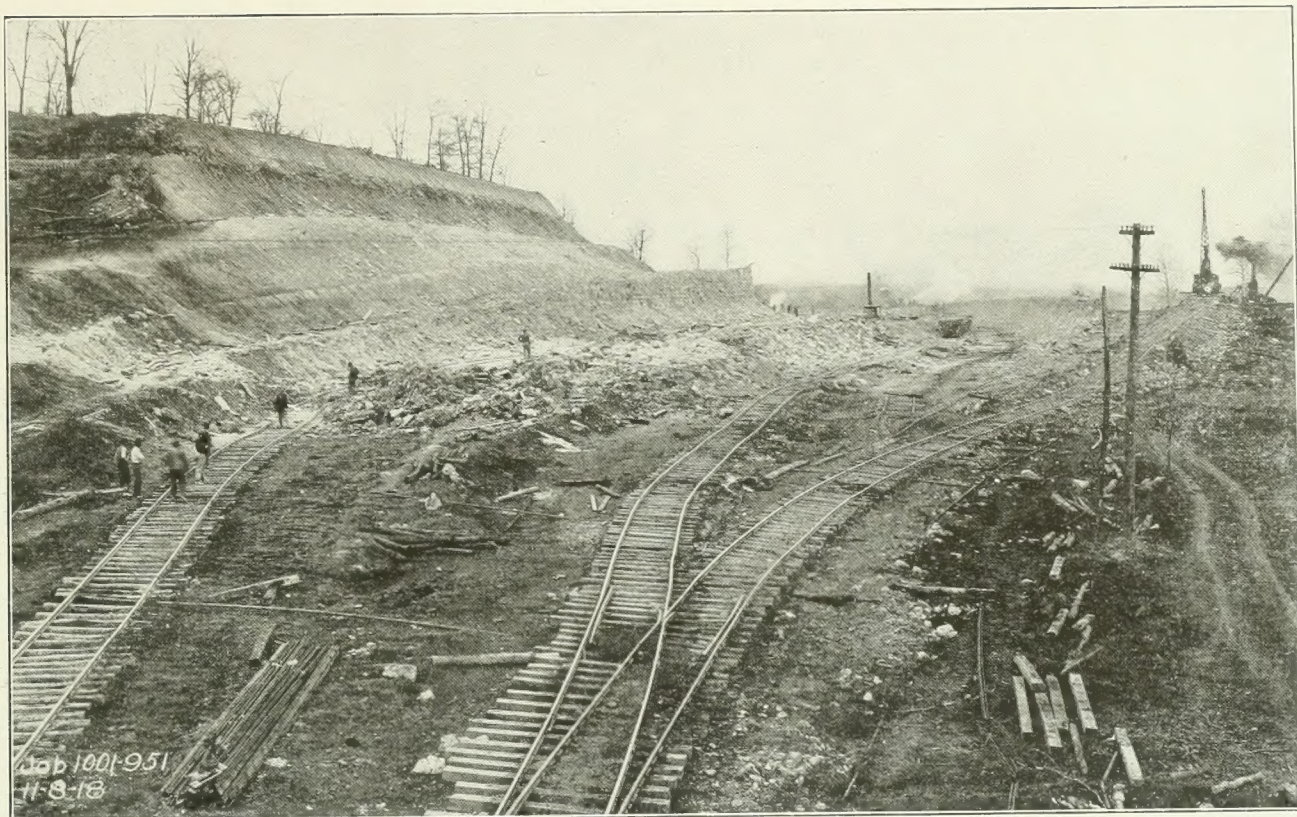


FIG. 67—RAILROAD CUT AT HUFFMAN HILL, NOVEMBER 8, 1918.

The total excavation will amount to 683,000 cubic yards. The excavation to date is 325,000 cubic yards. The maximum depth of the cut will be 120.4 ft., of which about 85 ft. is already removed. The total length will be 4800 ft. Most of this cut is in rock.

November Progress on the Work

GERMANTOWN

On November 5 one month had elapsed since concreting was started. During this period 2,800 cubic yards had been placed, the maximum run for any one day being 194 cubic yards. All of the outlet floor, the weirs, 90 feet of the partition wall and 145 feet of the temporary floor in the conduits have been completed. At the present time, November 18, a total of 3,500 cubic yards are in place.

Track for the travelling crane for the concrete work has been laid and one of the cranes erected. Carpenters have completed putting together the lower portion of the movable forms and it is now being erected in place.

Excavation for the outlet and conduits has progressed very satisfactorily. At the present time approximately 70 per cent of the total excavation for the conduits and the concrete structures at the inlet and outlet has been completed.

On October 21, Conley's team force started stripping on the south side of the river. This work was continued until November 8, when Conley's force was transferred to Dayton.

The influenza epidemic affected this camp to the extent of 18 cases, with one death, during a period of four weeks. At the present time, there are no new cases, and the old ones are improving very rapidly.

A. L. Pauls, Division Engineer.

ENGLEWOOD

The large Bucyrus dragline has finished the excavation for the outlet conduit. This marks the completion of a most important step in the progress of construction. Following this, the dragline is now proceeding down the river bed and across the dam-site, removing gravel, boulders, stumps, muck and all material unsuited for the foundation of an earth dam. This will be piled in a windrow along the east bank of the river, to be later placed in cars by a subsequent operation of the dragline and hauled to the waste bank.

Concreting of the outlet conduits is progressing favorably. The inverts, or floors, will be finished to the upstream portal before the month is out. The sidewalls of the lower portion of the conduits are well past the center line of the dam; in other words, they are more than half finished. A beginning has been made upon the arches, which is the final step in concreting the conduits. Specimens of the concrete as actually placed, made into cylinders and tested, show unusually high strength. Steam coils have been installed in the material bins at the gravel washing plant to heat the sand and gravel while concreting in freezing weather.

Work on the cross dam, to enable the hydraulic fill to commence east of the river, is progressing favorably. In addition to excavation from the regular borrow pit, material for this embankment is

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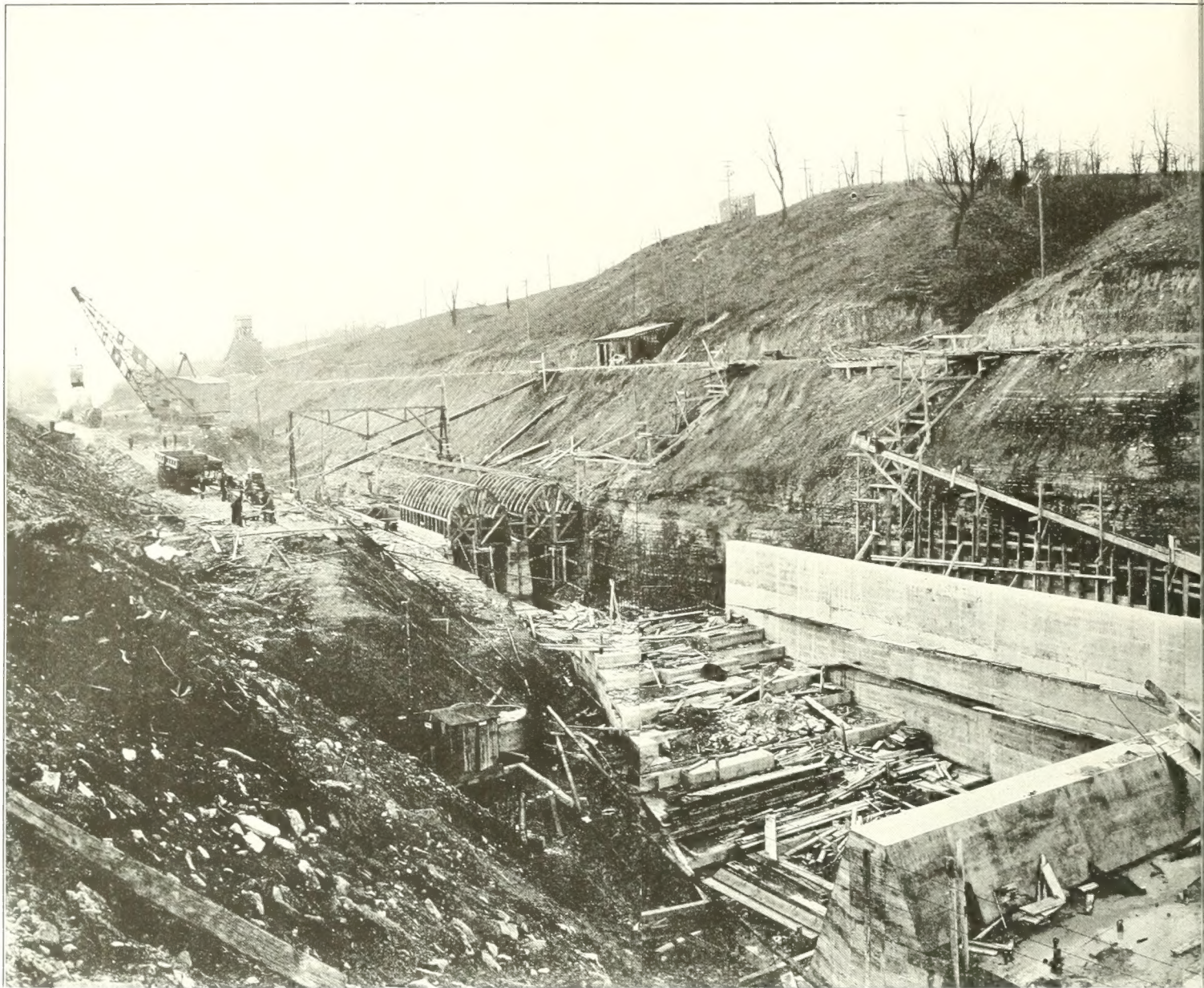


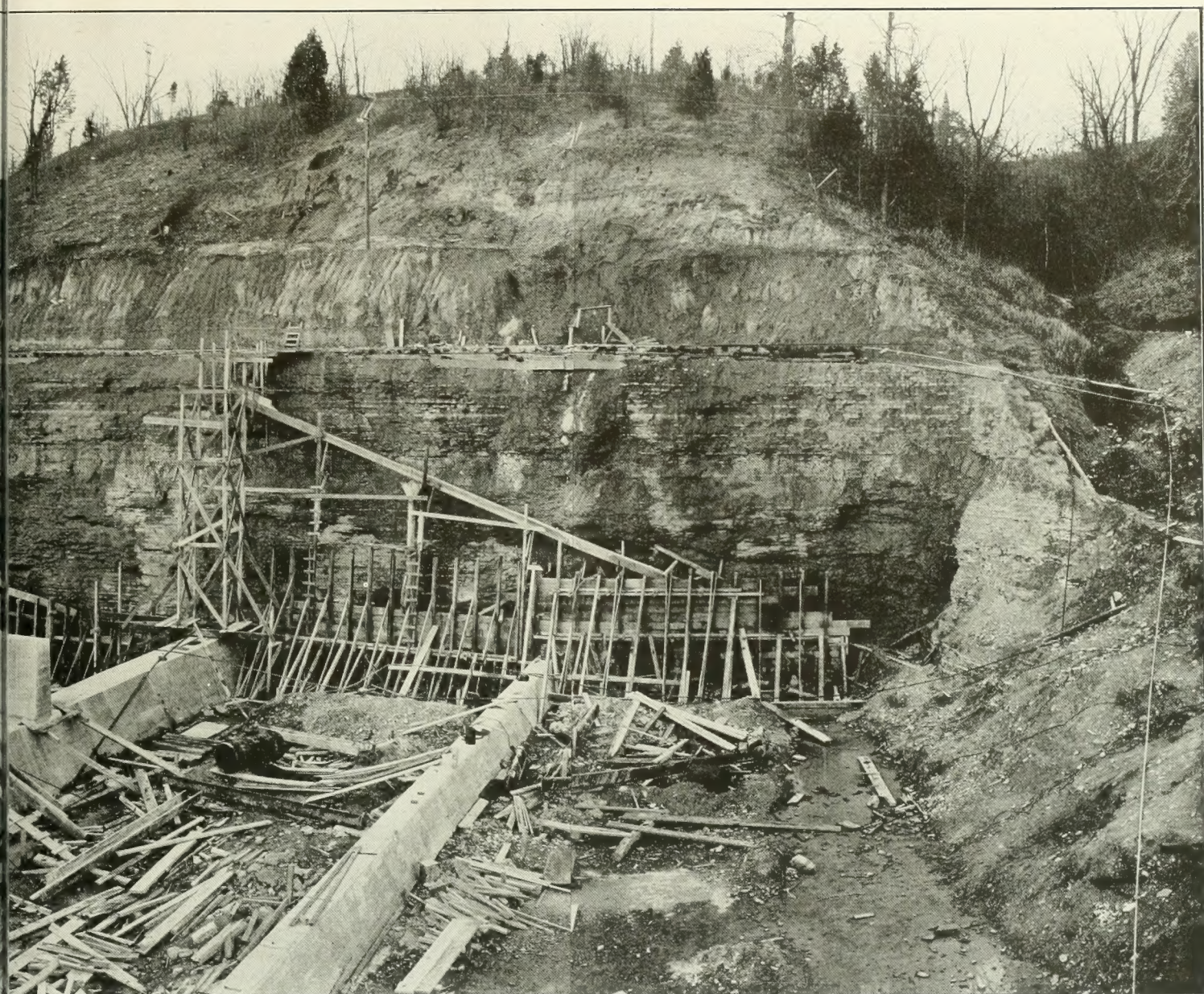
FIG. 68—THE WORK AT GERMANTOWN

The excavating and concreting for the outlet conduits at the Germantown dam are proceeding at the same time. The excavation is done by the Class K Lidgerwood dragline excavator seen in the picture at the left, which digs the material ahead of the concreting and loads it into 12-yard dump cars, two of which may be seen. The dump car trains are hauled by 40-ton standard gauge dinkey locomotives, two of which may be seen at the extreme left.

The concrete is mixed in the gravel washing plant seen in the distance beyond the dragline excavator. It is carried to the work in $1\frac{1}{4}$ -yard hopper cars on a 3-foot gauge track laid on the rock shelf which appears cut in the hillside above the excavation. It is dumped from the cars into inclined chutes, several of which may be seen, which carry it down the hill into the forms by gravity. Several of these chutes, for the outlet works at the right, are supported on scaffolding, but for the conduits they will be hung from travelling trusses which span the rock

excavation. One of these trusses appears in the picture with its hanging chute. The truss runs on tracks laid on narrow shelves cut on each side of the rock excavation. To fit the excavation these tracks are laid at different levels on the two sides. The timber supporting the further rail may be seen just over the vault-shaped forms for the conduit arches. The truss is carried by two "A" frames, supported on two-wheeled trucks running on the rails. The same device is in use for the concreting at the Englewood dam. The track is extended as the excavation proceeds, enabling the trusses and chutes to discharge concrete anywhere into the excavation.

The concrete structure, which is for the purpose of carrying the water of Loramie Creek through the base of the dam after completion, consists of three main portions; an open channel leading the water to the dam itself, a pair of tunnels or conduits piercing the base of the dam, and another open outlet channel leading the water from the lower toe of the dam into the valley below. This outlet channel is



NTOWN, NOVEMBER 29, 1918.

to be of special construction to absorb the energy of the water rushing out of the conduits in times of flood, and has been already described in the September Bulletin. In the picture the work both on the conduits and the outlet structure is shown. The near ends of the arched concrete forms which appear mark the position of the downstream ends of the conduits, the view being upstream with Twin Creek out of the picture a little to the left. The conduits as built will be two-storied. The walls of the lower story may be seen beneath the arched forms. This lower story will be filled with gravel, after the dam is completed, and floored over at the top, being then no longer necessary. It is necessary during construction in order to provide ample conduit capacity to guard against possible harm to the partly built dam embankment during floods.

The concrete work to the right of the arched forms is part of the outlet channel. The water of the creek, after the dam is completed, will issue from the conduits and flow down the concrete stairway,

which appears in the picture, and on into the pool basin which lies just beyond the left hand cross-wall, or "weir;" then on over the weir into the second pool basin, between the two cross walls; then on over the right hand cross wall to the concrete floor or apron at the right, whence it discharges into the valley below. The outlet is at present blocked by the valley bottom at the extreme right, which will be excavated later. The longitudinal wall in the center of the picture, when finished, will run up to and connect with the dividing wall between the two arched conduits. Its purpose is to prevent violent cross eddies in the water issuing from the conduits at times of extreme flood.

The little house at the left shelters the electric motor of a centrifugal pump which keeps the excavation from filling with ground water. The transformer station which supplies electric power for this and various other purposes at the dam is within the little fenced inclosure seen in the picture at the top of the hill.

being taken from the spillway excavation about 1,400 feet west of the river. This latter operation produces double results; it furnishes embankment material as a by-product from a necessary excavation.

Foundations for the monitor pump house are being graded and concrete bases installed for the 10-inch pumps which will supply the high pressure streams for excavating the embankment material.

The camp schoolhouse, adapted to the purpose from one of the summer bungalows acquired by the District, is ready for occupancy and admirably suits the purpose. In addition to the regular studies, a manual training class is being conducted under the guidance of the carpenter superintendent, H. H. Rupe, and one of his assistants, John Cypherd. The boys are being taught the handling of tools and incidental to their class work are making articles of practical use in the camp and on the work.

H. S. R. McCurdy, Division Engineer.

LOCKINGTON

Favorable weather has permitted the concreting to be carried on at a good rate during the month. The floor of the outlet works has been completed from the north end to a point about 95 feet south of the center line of the dam. The retaining walls of the same have been completed to their full height from the north end of the structure southward for a distance of 125 feet, and are partially completed still further south as far as the finished part of the floor above mentioned. The maximum height of these

walls so far attained is about 50 feet. The total amount of concrete placed up to November 15 is 11,150 cubic yards. The best day's run during the past month was on November 5, amounting to 330 cubic yards. Four 27-foot sections of richer concrete for the lining of the conduit have also been poured.

Drilling and blasting of the bed rock for the hydraulic jump pool is being carried on. The pumps supplying water to the gravel washing plant have been moved to a sump in this excavation. Drilling for the grouting and drainage of the foundation rock is also in progress.

The erection of the Class B Lidgerwood dragline has been completed and the machine will begin this week loading gravel from the storage pile east of the channel excavation into the cars which carry it to the gravel washing plant. Several changes have been made in this plant to obtain a drier sand, and also to retain the finer particles so that they may be used in the concrete. Equipment is being installed to heat the concrete aggregates by means of steam pipes, so that concreting may be carried on as long as possible into the cold weather. Clearing the trees and brush from four or five hundred feet of the outlet channel site leading to Loramie Creek from the damsite has been done.

The repairs on the Port Jefferson dam, now being made by Price Bros., will be completed in about ten days. The rock fill is now being placed in the timber cribs. One layer of the old decking of the dam is being replaced by new plank.



FIG. 69—EXCAVATION FOR CONCRETE STRUCTURE AT THE HUFFMAN DAM.

The temporary track carrying the Big Four Railway around the proposed outlet works appears at the left. This temporary track, about 7,000 ft. in length, had to be finished and ready for traffic before the excavation could be begun. The old track ran just beyond the gravel washer seen at the right. The excavation is being done by the dragline excavator, the material being used to build railway embankment between the dam and Dayton. The old bed of Mad River is a few rods to the right of the dragline, the stream being diverted several hundred feet to the east at this point.

Excellent progress is being made on Road No. 9, which connects the road at Lockington with the Infirmary Pike, and taking the place of the former road across the damsite, now abandoned. The teams are now working on a fill near the north end of this road.

Materials are now on the ground to connect the substation at Piqua, now being used as source of electric power, with the new transmission line to Piqua of the Dayton Power & Light Co. The connecting line will be erected in the near future.

Boxing in of the pipes at the camp, and of the cottage foundations, has been nearly completed. The camp and mess gardens have been plowed.

B. M. Jones, Division Engineer.

HAMILTON

Work has begun on the east levee embankment south of the Columbia Bridge by the Class 14 Bucyrus dragline, the material for the levee being taken out of the proposed channel cut.

Pascal and Marshall Avenues have been surfaced with gravel to form a detour, taking the place of Peck Avenue, which has been shut off by the railroad embankment. This work was done with two 5-ton trucks loaded by the Class 14 dragline.

The large dragline is continuing the work of excavating the low water channel and building the levee. A surfacing of loam is being placed by the dragline on the river side of the levee, on the berm, and on the channel slope.

The railway grade extending along the river from the south waste bank north to the Columbia bridge, has been completed, the work being done by the small dragline excavator. A gang of men is now surfacing and aligning track. Material excavated from the river will be hauled to the waste bank along this grade.

The Buckeye Street sewer has been completed for a distance of 475 feet, the excavation being about 60 feet ahead of the concrete work. Gravel and sand for the concrete are being obtained from the trench. No clay is being encountered at present.

The portable saw mill for sawing up the timber on the west side of the river is in place and a considerable amount of logging has been done.

C. H. Eiffert, Division Engineer.

TAYLORSVILLE

Road No. 12, extending from the west end of the damsite to the Brown Schoolhouse road, is completed. A contract has been let and work started November 12 on Road No. 13, extending some 4,000 feet from the east end of the damsite to the Taylorsville Pike. A temporary road 1,750 feet long has been constructed from the west end of trestle No. 1 over the Miami River to Road No. 13, making a road across the Miami River at the damsite and providing a more direct route to Huffman dam and other points east.

The earthen cofferdam, 30 feet high and extending about 500 feet along the east bank of the Miami River, to protect the outlet works excavation from high water, has been completed by the big dragline. A large part of the base of this has been placed in water from 4 to 20 feet deep. The first effect of the

weight of this embankment was to thrust the silt and mud of the river bed out into the stream, upheaving the river bed in places above the surface of the water. This continued until the material under water had reached a slope of 4 or 5 to 1, flat enough to counteract the thrust.

Not much has been done on the end dam of the hydraulic fill pool on the west bank of the river, due in part to diverting earth from it to the cofferdam on the other bank, but principally to breakdowns of the steam shovel.

Sluicing for the hydraulic fill began October 17. A number of necessary adjustments have since been made on the water pumps. Progress was also slowed down, at first, due to the shallow covering of surface earth above the Cincinnati rock, making shifts of pipe lines necessary. On November 5, 1,000 cubic yards were moved in about 8 hours. The plant has been shut down since, awaiting the completion of excavation for the cofferdam.

Three double houses and one special No. 8 cottage are under construction at the camp. The shop and warehouse on the east river bank are completed and the machinery installed. Gravel walks have been laid from all cottages and buildings to the streets.

O. N. Floyd, Division Engineer.

DAYTON DIVISION

Excavation amounting to 206,300 cubic yards has been removed from the river channel between Island Park Dam and the mouth of Mad River by the two large dragline excavators. A considerable amount of this material was moved more than once in order to place it in final position in levee, spoil bank or channel fill, making a total yardage of 313,500 handled by the two machines to date.

Dragline Excavator No. 789 is building a cofferdam for the purpose of lowering the 12-inch water main in the river channel opposite Linwood Avenue.

On the construction of the enlarged levee along the east bank of the Miami River north of Dayton, (Contract No. 41) a total of 33,000 cubic yards of embankment has been placed by the Monhigan Walking Dragline, of the McWilliams Northern Dredging Co. Team work has been started on the lower end of the Contract opposite Island Park, where a section of the work 1,400 feet long will be constructed by hauling with wagons. The old levee is being raised about five feet.

Sunset Avenue Dam has been completed except for a closure section of 96 feet, which will be left open until the Sunset Avenue Drydock is completed. Work has just been started on the drydock.

A Class 9½ Bucyrus dragline excavator has been received and is being erected at Herman Avenue Bridge. This machine will be used with a 60-foot boom and one-yard bucket.

Fair progress is being made on the construction of the steam tug. It will probably be ready for launching about the end of the year.

Price Brothers have graded the site of the concrete block factory and the factory building is under construction. The concrete blocks will be used for paving the lower slopes and bed of the improved channel around bends where caving might occur on an unprotected bank.

C. A. Bock, Division Engineer.



FIG. 10—LOWERING A 12" WATER PIPE IN THE MIAMI RIVER AT DAYTON

The pipe, which carries the city water supply underneath the river, had to be lowered from $2\frac{1}{2}$ to 3 feet to accommodate the deepening for the improved channel. The dragline first built an earthen cofferdam around the portion to be lowered, out of material excavated from the river bed. It then excavated a trench along each side of the pipe, from which the water was pumped by a centrifugal pump driven by an electric motor in the little house at the left, the discharge water from the pump showing clearly in the picture. Men with shovels then carefully lowered the pipe by digging the material from beneath it. The water supply carried by the pipe was not stopped at any time during this operation, although the water pressure was somewhat lowered by partially closing the supply valve as a precaution.

THE FILL

The delivery and placing of the gravel ballast for the temporary relocation of the Big Four main track around the site of the concrete structure for the outlet works of the dam, was completed on October 28. Big Four traffic was diverted to this new location at 11:00 a. m., October 24, and at 1:00 p. m. the same date, the large electric dragline began tracking into position to commence the excavation for the outlet works. The excavation will be started at the upper end and proceed down stream. This will enable the placing of concrete to follow up the excavation while the latter is in progress. The concrete plant is so situated as to make this program most feasible.

Preliminary investigations seemed to show that the seepage water from the river side of the excavation could be handled by pumping. To be sure of the exact conditions, excavation was made along the side that is out in the old bed of the Mad River, by means of the dragline excavator while it was being tracked to the upper end, the excavated material being used for railway embankment. The results have been gratifying. Almost impervious clay and rock material were found up to the ground surface, without water bearing gravel on top. Fifty-five hundred cubic yards had been excavated with this dragline prior to November 16. The material is being placed

in the fill for the relocation of the Big Four and Erie Railroads from Dayton to the damsite, thus utilizing material that otherwise would have had to be wasted.

After the smaller steam dragline had completed the excavation of the ballast gravel, it was taken across Mad River and completed the remaining 1,000 cubic yards at the entrance of the diversion channel. Then, on November 12, it began excavating the cut-off trench along the axis of the dam, across the valley to the Erie Railroad. Five thousand cubic yards of this had been excavated up to November 16.

The second story of a barn in camp has been remodeled for community service. With comparatively little work or expense, an unwelcome building has been converted into an attractive and commodious hall, which will be a center for the social activities of the employees and their families.

C. C. Chambers, Division Engineer.

RAILROAD RELOCATION

Erie and Big Four. The grading of nearly $3\frac{1}{2}$ miles of the relocation from Enon west is almost completed. Twenty-three car-loads of rails have been unloaded at Enon. The team outfit of Condon & Kolterman, subcontractors under the Walsh Con-

struction Co., is at work grading the roadbed south of Fairfield.

Drilling and blasting are being continued in the big cut at Huffman Hill. The steam shovel there is working two ten-hour shifts per day. It has moved an average of about 1,350 cubic yards per day during the month. The material excavated is used for building the two levees east of the cut and also for railroad embankment on the relocation west of same toward Dayton. Material excavated for the conduit and outlet works of the Huffman Dam will also be utilized as railroad embankment west of Huffman Hill.

Preparations are being made for the Mad River channel change immediately above the Dayton Hydraulic Company's head gates.

Contractor J. C. McCann, who was awarded the contract for the paving of nearly two miles of the relocation of the Dayton and Springfield Pike, is making excellent progress. He expects to get the bottom course all on before bad weather, so that the subgrade will not get soft and stop his work later.

Frank Hill Smith, Inc., has completed two concrete bridges at the west end of the relocation between Dayton and Huffman. Good progress is being made on his contract for two other culverts and for a retaining wall at Huffman. Three concrete bridges have been completed during the past month

and three others are under construction under the direction of Mr. Sprague, who is superintendent in charge of the District forces. Good progress is being made on the bridge at Mud Run, and piles are being driven for the Smith ditch bridge west of Enon.

Baltimore & Ohio. Kahl Bros.' shovels are still working in cuts south of Johnson and are making fair progress. La Boiteaux Co. has completed the 12-foot arch north of Dayton and is making arrangements to work on the numerous head walls for culvert pipes from the Taylorsville dam south to Miami River bridge. The Vang Construction Co. is working one shovel in side hill cuts along the Miami River at a point about 2½ miles north of Dayton, and is making fair progress. The other shovel, working in the 135,000-yard cut south of Poplar Creek, is moving about 1,000 yards per day. The 30-foot concrete arch at Poplar Creek is about 90 per cent complete. The Condon & Smith shovel has about half finished the 97,000-yard cut north of Taylorsville. Miller Bros. have made considerable progress in head walls for culvert pipes. The 26-foot arch at Picayune Creek is about 90 per cent complete. D. H. Condon has completed his contract, and arrangements have been made to load his equipment at Tadmor.

Albert Larsen, Division Engineer.

The Conservancy Athletic Association

The first meeting of this association was held in the headquarters office on November 12 and an organization was effected. The Executive Committee consists of Walter M. Smith, Chairman; Miss V. M. Richmond, Secretary; E. C. Chandler; L. F. Wilcock. It was agreed to organize a Basket Ball Team, of which L. C. Bernard was elected Manager and C. S. Bennett, Treasurer. Arrangements have been made for practice games, two of which have already been played. The following men have appeared on the floor as candidates for the team: Maltby, Everhard, Floyd, Heier, Sylvester, Sullivan, Hall, Shea, Kuboski, Johnson, Lehman, and Huffman. This is good material, but more is wanted. If you like any athletic game, come out to the practice. Announcements of dates, etc., will be posted on the

Bulletin Board in the lower hall of the headquarters office. Watch it. Games will be arranged with rival organizations. If you can't play, be a fan. A "barage" of noise helps. A special, high-explosive, Conservancy yell, a "Jack Johnson" of its kind, is under consideration. The organization of Bowling Teams is proposed. There was good fun on the alleys last winter and better may be looked for the coming season. A Basket Ball Team is planned also among the young women. All this is as it should be. Athletics can be made of real benefit in any industrial organization large enough to furnish the necessary material. This is the case with us, and the Bulletin hopes and expects to see the new organizations prosper. It will be glad to extend its aid.

The Liberty Day Celebration

"Liberty Day" was celebrated by the men of the District as it was by workers all over the country. Whistles and bells at two o'clock in the morning had proclaimed the tremendous news of peace. Employees gathered in their accustomed places, but not to work. Work was out of the question; it was a spontaneous holiday. The headquarters office at Dayton broke loose about nine o'clock. Main street had been an uproar of parading people from the railway tracks to the river, on foot and in wagons, automobiles, and motor trucks, since early in the morning. The maelstrom was irresistible and when about nine o'clock a two-ton truck from the garage

drove up, the entire headquarters office "piled in," overflowed into touring cars and "flivvers," and joined the procession. There must have been fifty people in the big truck alone, packed like herrings, the Chief Engineer in the center, rolling down Main Street amid the uproar. Now and then the truck would stop or start with a jerk, bringing the human mass up—bang!—against the front or rear bulwark. But no one was hurt, and as each shock passed, the crowd would catch its breath and yell like a high-school gang. Strange sights were seen. The writer will never forget one glad dignitary of the District, jammed along the truck "side line," with a joint of

8" stove pipe in one hand and a brick in the other, banging the two together like the loud timbrels of Holy Writ, while the big truck careened and lurched down Main Street; and every now and then, when his improvisations on his remarkable instrument could no longer express his feelings, emitting joyous yells.

A Conservancy girl, who stood in the truck just back of this gentleman, naturally did not recognize him. Perceiving a friend on the sidewalk and needing some means of salutation, in her excitement she snatched the hat from the dignitary's head in front of her, waved it frantically to her friend, then clapped it back in place again. She was a scared girl later, when she discovered whose hat she had waved.

We detail these little incidents, not simply because they are humorous, but because they illustrate exactly the sort of celebration it was. Not in a lifetime shall we see anything like it again.

Toward noon this part of the affair came to an end. The picture, figure —, taken at one of the pauses for breath near the headquarters office, shows

what our section of it looked like apart from the rest.

The more serious and formal part of the Dayton celebration occurred on Sunday, November 17, and in this the District likewise had its share. A float led the Conservancy section of the parade, showing transits, levels, current meters and other instruments as if in operation, with the motto "The Engineer's Job: Over There—Check the Huns; Over Here—Check the Floods." This was followed by marchers, representing the various sections of the work, the Headquarters Office, the Railway Relocation, the Englewood Division, the Dayton Division, etc., each marcher carrying a flag and an M. C. D. arm band, and each section carrying a sign of designation. The District was given a place about the middle of the parade, which, according to newspaper estimate, comprised some 18,000 people. The line of march began at Third and Ludlow Streets, went north on Ludlow to Monument, east to Main and south on Main to the Fair Ground, where it ended.

No one who took part in either of these celebrations will ever forget them.



FIG. 71—OUR PART OF THE "LIBERTY DAY" CELEBRATION.

The Jefferson Street end of the Conservancy Headquarters Building and Annex appears behind the celebrants. The log house in the background was once the old Newcom Tavern, the first log house in Dayton, built in 1796.

War Service Notes

THE CONSERVANCY RED CROSS DRIVE

The Conservancy Red Cross Drive ought to have the support of every person connected with the District. It is probably the last chance we shall have to help that very vital activity of the war, the work of the American Red Cross, which still has a

large job "over there" during the year which is likely to pass before the boys are all home again. The Red Cross, as is known, has been put on the basis of regular membership, with annual dues of \$1.00 to support the work. If you are not a member,

join. If you are, pay up cheerfully and thank God that your bit has been so much easier than pasturing trench "cooties" or stopping German shells. The work will be done by the women of the District, both at headquarters and on the various jobs. When they strike you, smile and dig up. The work is in charge of L. F. Wilcock and C. N. Phillips of the Headquarters Office. The drive will last during the week, November 16-23.

A letter to Dubois from Captain E. L. Stapleton of the Gas Defense Service, reports him as being in Army Base Hospital No. 1, New York City, down with the "flu," but apparently not seriously, as he expected to be back at work soon. He now has his family with him in New York.

A letter to Mr. Morgan from W. P. Watson tells, among other things, of his receiving a commission as major. He is also Director of a Tractor Artillery School near Paris. His address is A. P. O. No. 702, A. E. F., France. He wishes to be remembered to all his friends of the Miami Conservancy District. We are sure they are all proud of the record he is making.

Roy Jackson reports from Camp Humphrey, Virginia, that the army seems to agree with him, as he has gained 16 pounds and a lieutenant's bars since he joined it. He received his commission October 25. He bewailed the probability (now a certainty) that he would never get across.

A. A. Ort, Ensign U. S. N., engineer in charge of transportation at the Hog Island Ship Building Yard, near Philadelphia, paid his Conservancy friends a brief visit recently. There has been no drop in the ship building activities at Hog Island since the Armistice, nor any signs there will be in the near future.

Seen and Heard at the Camps

TESTIMONIAL TO MR. FOEHR



We take pleasure in presenting our readers with the above reproduction of a medal recently presented by the Paymaster's Department to Mr. Chris. Foehr, Field Clerk at the Germantown Dam, as a testimonial to his prompt and efficient co-operation with the head office. We regret that the engraver's art can but feebly portray the beauty and finish of the original. The design, by our own staff artist, Mr. Louis R. Dubois, represents Mr. Foehr himself, somewhat in diminished in amplitude by the perspective, coming down the homestretch with a payroll in his hand. His competitors from the other camps may be noticed, out of sight in the distance. The inscription on the obverse side tells its own story of Mr. Foehr's merits. The original is 3¾ inches in diameter, done in American Morocco, hand-tooled. The material alone, at the present price of war-leather, makes the testimonial precious, and we have no doubt it will be treasured in Mr. Foehr's family as an heirloom.

C. N. Phillips has succeeded G. H. Matthes as Office Engineer at the headquarters office. Mr. Phillips' previous work, which has brought him into contact with almost every department of Conservancy work, has qualified him particularly well for his new position. Mr. Matthes, who held that strenuous job for nearly a year, and who brought it through the trying period of organization for construction work to its present orderly system, will

resume his former occupation with the District. His work will be to prepare and publish the technical reports on the works being built by the District, and on the results of special studies made by its engineering staff. The Bulletin, which feels indebted to both these men for generous help extended, takes the occasion to wish them both well in the work ahead of them.

N. E. Messner, who has been at the hospital in Hamilton for about seven weeks with a bad case of appendicitis, is about again, but has not yet returned to work.

Arrangements were made not long since for putting the Bulletin regularly on sale at all the news stands in Hamilton. Similar arrangements have been in effect for some time in Dayton, and it is hoped to extend such service farther as time goes on.

C. N. Phillips, Office Engineer, celebrated an unusually jubilant Thanksgiving due to the arrival of his first born, an eight-pound girl, at the Miami Valley Hospital early in the morning on that day. Babe and mother are prospering.

At Germantown: On Tuesday, November 26, an illustrated lecture on "Picturesque Ireland" was given by District Camp Inspector, C. W. Porter-Shirley and Miss May Turner, teacher. During the evening Irish songs were rendered by Mrs. Hulings and appreciated by the audience. A collection was taken at this gathering to obtain a flag for the school.

At Huffman: A fine hall has been made out of a barn on the campsite at Huffman. It was formally opened on Friday, November 22, by a Camp-Family gathering. A program was arranged by Miss Goss, teacher at the Camp. Solos, duets, readings and folk dancing were rendered by the school children. Speeches were delivered by Mr. Morgan, Mr. Chambers and Mr. Porter-Shirley.

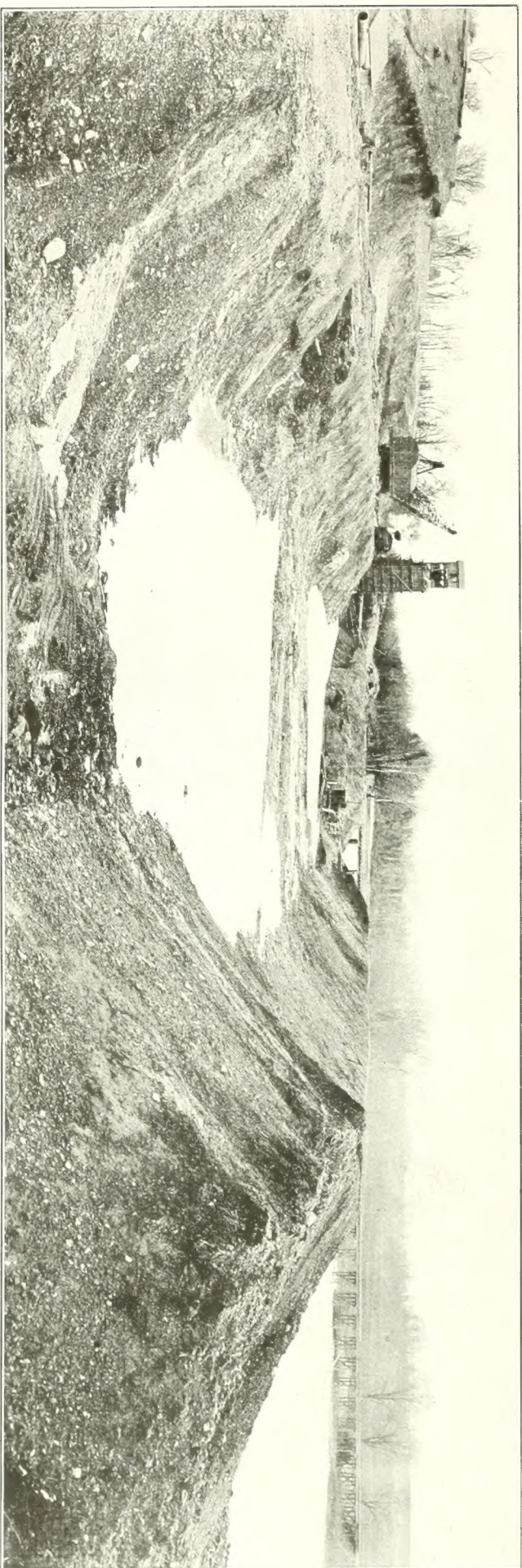


FIG. 73.—COFFER DAM AND OUTLET CONDUIT EXCAVATION AT TAYLORSVILLE.

The conduit structure, over 100 ft. wide, will be built in the excavation in the middle of the picture. The earth embankment at the right, technically a "cofferdam,"

is built to keep the river, seen at the extreme right, out of the excavation during the work. For the outlet works the maximum excavation will be over 200 ft. wide.

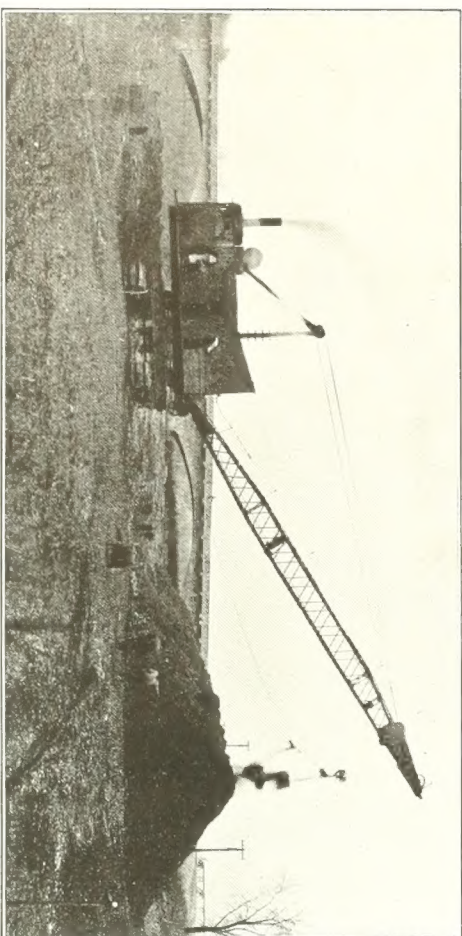


FIG. 74.—BEGINNING THE NEW LEVEE AT HAMILTON.

Columbia bridge across the Miami is in the distance. The small brick dome-like structure at the left is a cistern, unearthed by the flood of 1913. The house was swept away.

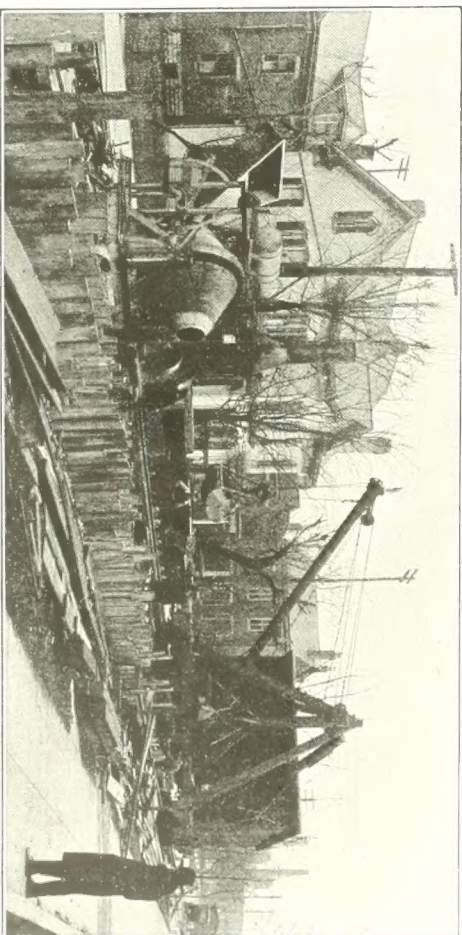


FIG. 75.—BUILDING THE BUCKEYE STREET SEWER, HAMILTON.

The sewer is of concrete 5½ ft. in diameter, and about 25 ft. below the surface. The trench is dug by a clamshell excavator carried by a stiff-leg derrick seen at the right. Gravel for the concrete is dug from the trench.